

REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-10 are currently pending.¹ Claims 1, 2, 4, and 10 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 1-10 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hirai et al. (“The Development of Honda Humanoid Robot,” *Proceedings of the 1998 IEEE International Conference on Robotics and Automation*).

Amended Claim 1 is directed to a robot remote manipulation system including a bipedal walking robot and a remote manipulation device for remotely manipulating the bipedal walking robot according to controlling data, the robot being connected to the remote manipulation device via a communication network, the remote manipulation device comprising: (1) a pair of bilateral mechanical rotating elements each providing a quantity of motor for one of bilateral legs of the bipedal walking robot; and (2) a controlling data transmitter for transmitting the controlling data corresponding to the quantities of motion to the bipedal walking robot. Further, amended Claim 1 recites that the bipedal walking robot comprises: (1) a controlling data receiver for receiving the controlling data transmitted from the remote manipulation device; (2) a leg motion controller for processing the received controlling data and causing the bilateral legs to move forward or backward according to the controlling data; (3) a sensor for sensing environmental information; and (4) a force sense data transmitter for calculating forces applied to the bilateral legs based on the environmental information from the sensor, and transmitting the calculated result to the remote manipulation

¹ However, Applicants note that the Office Action Summary and page 2 of the Office Action refers to a Claim 11. However, Applicants do not believe a Claim 11 has been presented.

device as force sense data. Claim 1 has been amended to include some of the limitations recited in original Claim 2. Accordingly, no new matter has been added.

The Hirai et al. reference is directed to a humanoid robot having the ability to move forward and backward, sideways to the right or the left, as well as diagonally and up and down stairs. As shown in Figure 4, the Hirai et al. reference discloses a teleoperation console in radio communication with the robot. As shown in Figure 9, the Hirai et al. reference discloses that the teleoperation console includes a user interface, an action planner, an environment map, and a “dynamics control of masters arms” unit. Further, page 1326 of the Hirai et al. reference discloses that the action planner sends basic action commands such as “go straight”, “turn”, and “go upstairs,” to the robot. However, Applicants respectfully submit that the Hirai et al. reference fails to disclose a remote manipulation device including a pair of bilateral mechanical rotating elements each providing a quantity of motion for one of the bilateral legs of the bipedal walking robot, as recited in amended Claim 1. The Hirai et al. reference fails to disclose that the teleoperation console has such features. Further, Applicants respectfully submit that the Hirai et al. reference fails to disclose a robot having a force sense data transmitter for calculating forces applied to the bilateral legs based on the environmental information from the sensor, and transmitting the calculated result to the remote manipulation device as force sense data. The Hirai et al. reference is silent regarding the robot transmitting force sense data back to a remote manipulation device, as recited in Claim 1. Accordingly, Applicants respectfully submit that the rejection of Claim 1 (and dependent Claims 2 and 3) are rendered moot by the present amendment to Claim 1.

Independent Claim 10 recites limitations analogous to the limitations recited in Claim 1. Moreover, Claim 10 has been amended in a manner analogous to the amendment to Claim 1. Accordingly, for the reasons stated above for the patentability of Claim 1, Applicants

respectfully submit that the rejection of Claim 10 is rendered moot by the present amendment to that claim.

Independent Claim 4 recites limitations analogous to the limitations recited in amended Claim 1. In particular, Claim 4 is directed to a remote manipulation device for remotely manipulating a bipedal walking robot connected to the remote manipulation device via a communication network, comprising, *inter alia*: a receiver for receiving force sense data from the bipedal walking robot via the communication network, the force sense data being sensed by a sensor provided in the bipedal walking robot and indicating forces applied to the bipedal legs of the bipedal walking robot.

As discussed above, the Hirai et al. reference fails to disclose a remote manipulation device including a receiver for receiving force sense data from the bipedal walking robot via a communication network, as recited in Claim 4. The Hirai et al. reference fails to disclose that the teleoperation console is configured with a receiver to receive force sense data from the bipedal walking robot via the communication or, wherein the force sense data is sensed by a sensor provided in the bipedal walking robot and indicates forces applied to the bilateral legs of the bipedal walking robot. Accordingly, Applicants respectfully submit that the rejection of Claim 4 (and dependent Claims 5-9) is rendered moot by the present amendment to Claim 4.

Moreover, Applicants respectfully submit that the Office Action fails to state with particularity how the Hirai et al. reference discloses the elements recited in the claims, specifically the dependent claims. For example, Claim 7 recites adjusting the resistance of the rotating motion of the bilateral mechanical rotating elements, while Claim 8 recites treadmills having rotary belts and rollers. However, the Office Action merely cites the entire Hirai et al. reference as disclosing all of the claimed elements. However, Applicants

respectfully submit that the Hirai et al. reference fails to disclose the remote manipulation device recited in Claims 7 and 8.

Thus, it is respectfully submitted that independent Claims 1, 4, and 10 (and all associated dependent claims) patentably define over the Hirai et al. reference.

Consequently, in view of the present amendment and in light of the following discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

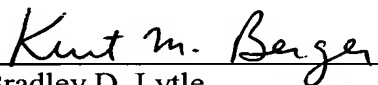
Respectfully submitted,

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